

PORTLAND FIRE WEATHER - 2003 ANNUAL REPORT

STATISTICS FOR AREA ONE (COASTAL STRIP)

This is comprised of zones 601 and 612. RAWs used to represent the area include:

Cedar Creek, Cannibal Mountain, Goodwin Peak, Dunes, Huckleberry and Tillamook.

	TEMPERATURE		RELATIVE HUMIDITY				FUELS		PRECIPITATION			LTG
			3 OR MORE RAWs MEET CRITERIA FOR 2 HRS						MEDIAN VALUES			
DATE	AVE MAX	AVE MIN	AVE MIN	# DAYS <25%	AVE RECOVERY	# NIGHTS <60	ERC	100 HR	# DAYS >.01	# DAYS >.10	# DAYS >.25	# DAYS
May 1-10	54.5	40.3	65.4	0	98.3	0	NA	NA	5	2	2	0
11-20	58.1	40.8	55.8	0	94.9	0	NA	NA	4	3	2	1
21-31	66.8	48.6	57.0	0	94.4	0	NA	NA	2	1	0	1
June 1-10	71.2	51.0	47.4	2	83.2	3	24.1	11.8	0	0	0	0
11-20	63.1	47.9	62.6	0	92.7	0	23.8	13.4	1	0	0	0
21-30	69.4	50.0	52.5	1	86.4	2	31.9	11.7	0	0	0	1
July 1-10	67.2	48.8	58.0	0	91.4	1	32.5	12.7	1	0	0	0
11-20	72.0	53.4	55.8	0	89.7	1	33.6	12.8	2	0	0	0
21-31	74.2	55.1	51.1	1	81.2	3	44.9	9.2	0	0	0	0
Aug 1-10	69.2	52.2	57.4	0	89.3	1	44.0	11.1	1	0	0	2
11-20	71.9	53.1	54.3	0	91.1	0	41.2	13.0	0	0	0	0
21-31	70.2	53.0	52.0	0	82.7	3	45.0	11.3	1	0	0	2
Sept 1-10	70.8	55.7	58.4	1	77.7	5	40.7	12.3	4	3	2	1
11-20	63.8	48.9	62.8	0	93.4	1	20.7	19.2	2	2	2	2
21-30	72.3	53.8	51.9	0	83.4	2	35.0	10.5	0	0	0	1
Oct 1-10	60.7	49.8	75.7	0	88.2	0	18.0	18.9	5	5	3	2
11-20	55.4	46.3	83.6	0	88.8	0	4.2	24.9	4	3	3	1
AVE/TOT.	66.5	49.9	58.9	5	88.6	22	31.4	13.8	32	19	14	14
2002	65.5	49.4	63.6	5	92.0	23	20.3	15.9	37	20	10	3
2001	66.0	47.8	59.3	7	89.8	12	NA	NA	46	30	15	4
2000	69	51	57	11	89	16	NA	NA	32	15	8	5
1999	68	50	60	10	89	19	NA	NA	43	14	4	3
1998	72	53	58	2	87	12	NA	NA	25	11	6	4
1997	70	53	60	1	90	10	NA	NA	43	30	24	10
1996	71	51	55	11	86	30	NA	NA	40	20	11	4

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DRY SPELL						
2003	2002	2001	2000	1999	1998	1997
105 days	35 Days	22 Days	44 Days	33 Days	47 Days	40 Days

AREA HIGHLIGHTS

Overall, 2003 was quite similar to 2002, with a couple of exceptions. First, note the extremely long dry spell (see table above), compared to previous years. The 105-day dry spell (defined as the length of time between days of **MEDIAN** precipitation of .10 or more) was by far the longest in several years. It was more than double the previous high of 47 days in 1998. The other thing that stands out was the lightning frequency. There were 14 days of lightning in 2003. This was the most since 1997 (10 days).

The number of "Critical RH" days rivaled 2002. There were five days when the average daytime humidity was 25% or less, but 22 nights when the average humidity was 60% or less. Eight of the "critical nights" occurred in late August and early September.

The warmest 10-day temperature average took place at the end of July. The average high was 74 degrees. On July 28th, Goodwin RAWS had a high of 92 and Cannibal hit 89. Huckleberry and Cannibal made 90 degrees on the 29th. There was another hot episode in early June. On June 5th several stations exceeded 90 degrees. Tillamook hit 96, Cedar Creek 92, Cannibal 97, and Goodwin and Dunes 91 degrees. The end of June was also extremely warm with temperatures in the 90s. On the 28th Cannibal reached 99 degrees and Goodwin 96. September also had a couple of hot spells: September 2-3 and also the 26th. Highs were generally in the middle 80s to middle 90s.

Precipitation fell in two distinct periods: 1) first couple weeks of May and 2) early to mid-October. There were 14 days when the median precipitation exceeded 0.25 inches. Six of those days happened between October 6th and 20th. Cedar Creek had 1.56 inches on the 6th, while Dunes had 1.24 inches, Tillamook 1.13 inches and Goodwin 1.11 inches. Southwest Washington received a good dose of rain on the 12th. Abernathy had 2.21 inches and Huckleberry picked up 1.54 inches.

Area-average fuel indices (ERC and 100-hour) were well above 2002 values. ERC values reached 45 at the end of July, almost twice as high as 2002 (23). ERC's remained "critical" (40 or above) through early September. In 2002, the maximum 10-day ERC average was 35. The ERC's dropped off substantially in October. The areal average went from 35 at the end of September to just 4.2 by mid-October. The 100-hr fuel moisture values dropped to 9.2 percent at the end of July, then hovered in the 10-13 percent range until early September. The lowest 2002 10-day average was 11, in mid-August. "Critical" values are 12 percent or less.

RAWS NOTES: Tillamook was sporadic. Cedar Creek had suspect precipitation, at times.

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(STATISTICS FOR AREA TWO (COAST RANGE))

This is comprised of zones 602 and 603. RAWs used to represent the area include:

South Fork, Miller, Rye Mountain, Rockhouse1, Wilkinson Ridge, Village Creek, High Point, Clay Creek, and Abernathy Mountain.

	TEMPERATURE		RELATIVE HUMIDITY				FUELS		PRECIPITATION			LTG
			5 RAWs MEET CRITERIA FOR 2 HRS						MEDIAN VALUES			
DATE	AVE MAX	AVE MIN	AVE MIN	# DAYS <25%	AVE RECOVERY	# NIGHTS <60	ERC	100 HR	# DAYS >.01	# DAYS >.10	# DAYS >.25	# DAYS
May 1-10	57.5	39.6	57.6	0	95.7	0	NA	NA	5	2	1	0
11-20	60.8	39.9	49.2	1	94.4	0	NA	NA	4	2	0	1
21-31	73.1	49.1	45.7	0	93.0	0	NA	NA	0	0	0	2
June 1-10	78.4	51.6	37.3	3	78.9	3	30.7	11.0	0	0	0	0
11-20	69.9	48.3	52.0	0	92.5	0	30.2	12.4	0	0	0	0
21-30	74.9	52.1	43.1	1	80.8	2	34.1	12.1	1	0	0	0
July 1-10	77.5	50.0	40.7	0	89.1	0	41.3	10.9	0	0	0	0
11-20	81.0	53.8	40.2	1	88.0	0	39.7	12.1	0	0	0	0
21-31	88.1	57.0	30.5	5	79.5	3	52.3	9.0	0	0	0	0
Aug 1-10	76.7	52.7	48.0	0	88.9	0	43.4	12.1	1	1	0	4
11-20	80.0	53.3	43.9	0	91.0	0	40.9	13.1	0	0	0	0
21-31	80.4	53.9	38.4	0	82.2	1	44.1	11.5	0	0	0	2
Sept 1-10	78.5	57.2	45.5	4	74.6	3	40.2	12.7	3	3	1	1
11-20	67.4	48.3	52.6	0	92.1	0	20.2	18.7	2	1	0	0
21-30	78.6	55.4	41.9	1	80.5	1	30.5	12.6	1	0	0	1
Oct 1-10	63.1	49.9	73.2	0	98.6	0	17.2	19.5	5	3	2	2
11-20	54.8	44.8	85.3	0	99.4	0	6.3	24.3	3	3	3	1
AVE/TOT.	73.0	50.4	48.5	16	88.2	13	33.7	13.7	25	15	7	14
2002	71.9	48.7	48.8	6	90.3	22	29.2	13.9	34	17	7	5
2001	75.1	48.7	44.2	19	93.3	12	NA	NA	29	17	8	2
2000	73	51	55	7	90	12	NA	NA	33	11	4	4
1999	72	51	53	5	90	12	NA	NA	33	11	4	3
1998	76	53	54	0	92	6	NA	NA	22	6	3	2
1997	74	53	57	2	93	4	NA	NA	36	26	14	6
1996	75	52	52	2	87	24	NA	NA	23	11	7	4

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<i>DRY SPELL</i>						
<i>2003</i>	<i>2002</i>	<i>2001</i>	<i>2000</i>	<i>1999</i>	<i>1998</i>	<i>1997</i>
<i>80 days</i>	<i>78 Days</i>	<i>32 Days</i>	<i>57 Days</i>	<i>33 Days</i>	<i>83 Days</i>	<i>40 Days</i>

AREA HIGHLIGHTS

The things that stood out the most were the number of “critical RH” days and lightning frequency. There were 16 “critical RH” days. Only 2001 (19 days) exceeded 2003 during the last several years. The average high temperature was 73.0 degrees. This was rather “average” compared to previous years. In fact, only 1999 and 2002 had cooler fire seasons. However, keep in mind that the climate areas were re-configured in 2001, and more RAWS stations were used in 2002 and 2003. The number of “critical RH” nights were rather low, compared to the past few years. The data shows three distinct episodes: 1) early June, 2) late July, and 3) early September.

Similar to zones 601/612, the dry spell for zones 602/603 was the longest in several years. The 80-day spell started May 17th and ended August 4th. Another dry spell went from August 6th through early September. There were fewer days when the median precipitation was .01 to .10, compared to previous years. The years 1996 and 1998 had slightly fewer days. The greatest 24-hour precipitation amount (calendar day) for this area was 1.40 inches at South Fork RAWS on October 12. Rye Mountain had 1.12 inches on May 4th.

Of the 16 “critical RH” days, five occurred in the period July 21-31, and another four during September 1-10. These were the two most pronounced heat spells during the 2003 season. Afternoon humidity values on July 27th dropped into the mid-teens at a few locations. Rockhouse1 RAWS recorded 14% and High Point observed 19%. Minimum humidity on the 28th was even lower. Miller had 12%, Rye Mountain 15%, Rockhouse1 and High Point 16% and Clay Creek 17%. Extremely low daytime humidity continued on the 29th and 30th.

The early-season hot spell in June (4th-6th) produced high temperatures in the mid 90s. Wilkinson RAWS hit 95 on the 5th. Miller reached 97 on the 6th, Village Creek had 96, and Wilkinson and High Point made it to 95. Another hot episode at the end of June resulted in temperatures near 100 degrees. Wilkinson hit 101 on the 28th. Triple-digits also occurred at the end of July. Wilkinson recorded 103 on the 28th, Clay Creek had a high of 102, and Village Creek just missed triple-digits with 99. Similar readings were noted on the 29th and 30th.

Critical ERC values (45 or more) occurred in late July. Surprisingly, despite the numerous record heat spells, long dry spell and numerous “critical RH” days, ERC’s exceeded critical levels during one 11-day period (end of July). However, the areal-average of 52.3 was at least a 97th percentile value. ERC’s nearly hit critical levels again in late August. The areal-average was 44.1 during the period August 21-31. A couple of “wetting rain” events in mid-September brought the ERC values down to 20, but a late-season hot spell resulted in the ERC’s climbing back to 30. By mid to late October the ERC’s had fallen to 6.3. The 100-hour fuel moisture values dropped into single-digits (9.0) during the record heat spell of July 27-30. In general, the 100-hour values ranged from 10-13 percent during June-September. The fuel moisture levels temporarily increased to almost 20% in mid-September, then decreased to 12.6% by the end of the month.

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(STATISTICS FOR AREA THREE (SOUTH WASHINGTON CASCADES, NORTH OREGON CASCADES AND FOOTHILLS))

This is comprised of zones 605, 607, and 660. RAWS used to represent the area include:

Log Creek, Red Box Bench, Horse Creek, Eagle Creek, Blue Ridge, Elk Rock, Trout Lake, Canyon Creek, Cedar Flats, and Hamilton.

	TEMPERATURE		RELATIVE HUMIDITY				FUELS		PRECIPITATION			LTG
			5 RAWS MEET CRITERIA FOR 2 HRS						MEDIAN VALUES			
DATE	AVE MAX	AVE MIN	AVE MIN	# DAYS <25%	AVE RECOVERY	# NIGHTS <60	ERC	100 HR	# DAYS >.01	# DAYS >.10	# DAYS >.25	# DAYS
May 1-10	52.2	35.9	61.1	0	97.1	0	NA	NA	4	3	1	1
11-20	55.1	37.6	57.4	1	93.2	0	NA	NA	6	5	3	3
21-31	69.8	49.0	53.3	0	92.4	0	NA	NA	3	1	0	0
June 1-10	74.7	50.2	39.0	3	77.8	3	23.3	12.4	0	0	0	0
11-20	66.6	46.8	53.7	0	90.1	1	24.6	13.4	1	1	0	1
21-30	71.2	49.1	47.6	2	84.6	2	24.2	14.5	2	1	1	1
July 1-10	73.7	47.5	37.7	0	89.2	1	33.4	11.6	1	0	0	0
11-20	78.8	52.4	36.7	1	86.6	2	37.5	11.4	0	0	0	0
21-31	86.2	55.8	26.6	5	76.1	3	49.2	8.7	0	0	0	0
Aug 1-10	74.2	52.9	45.3	0	87.9	0	44.9	11.2	3	0	0	3
11-20	77.6	52.1	35.4	2	84.0	0	43.9	11.9	0	0	0	0
21-31	78.1	52.5	32.7	6	72.5	3	50.1	9.8	0	0	0	1
Sept 1-10	77.1	56.6	41.3	4	69.0	5	45.0	11.8	3	3	2	1
11-20	62.8	45.0	55.8	0	88.7	1	15.7	20.3	2	2	1	1
21-30	78.3	54.2	34.4	2	70.0	3	29.3	12.0	0	0	0	1
Oct 1-10	63.8	48.7	60.8	1	86.3	1	22.7	16.9	5	5	3	2
11-20	50.9	40.8	79.2	0	94.8	0	6.6	23.0	3	2	2	0
AVE/TOT.	70.1	48.7	46.9	27	84.7	25	32.2	13.5	33	23	13	15
2002	68.5	47.2	48.8	13	86.5	30	29.7	13.4	40	22	9	11
2001	66.1	46.9	55.7	4	89.0	23	NA	NA	42	23	25	7
2000	69	49	52	16	87	17	NA	NA	22	13	8	3
1999	68	48	52	15	82	22	NA	NA	36	18	7	10
1998	72	52	53	6	84	17	NA	NA	28	13	7	19
1997	69	51	61	1	89	13	NA	NA	37	27	17	11
1996	71	51	52	21	82	30	NA	NA	33	16	8	11

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<i>DRY SPELL</i>						
<i>2003</i>	<i>2002</i>	<i>2001</i>	<i>2000</i>	<i>1999</i>	<i>1998</i>	<i>1997</i>
<i>77 days</i>	<i>70 Days</i>	<i>32 Days</i>	<i>44 Days</i>	<i>30 Days</i>	<i>83 Days</i>	<i>40 Days</i>

AREA HIGHLIGHTS

Major seasonal highlights include the relatively warm average high temperature (70.1 degrees), above-average number of “critical RH” days, low average daytime humidity (46.7%), and lightning frequency (15 days). The average high of 70.1 degrees was the third-highest in the past eight years. In 1998 the average was 72 degrees, and in 1996 the average was 71 degrees. Similar to the coast areas, July 21-31 stands out as an extremely warm period. The average high was 86.2 degrees. High temperatures on the 28th included 97 at Eagle Creek and Log Creek, 96 at Canyon Creek, 95 at Hamilton Mountain, and 93 at Red Box Bench. Temperatures were even warmer on the 29th. Log Creek and Hamilton Mountain had highs of 99, Eagle Creek 98, Canyon Creek 97, and Elk Rock 96. There were no triple-digit readings this season (officially).

This area had a reasonably wet May, but precipitation was quite sparse thereafter. The dry spell of 77 days was the second-longest in the last eight years (see table above). The dry spell began June 22nd and ended September 6th. The precipitation break-down (see table on previous page) was similar to previous years. The dry spell came to an abrupt end on September 7th. Log Creek recorded 1.28 inches that day. Log Creek and Hamilton Mountain exceeded an inch on the 8th. Another wet storm occurred on September 11th. Hamilton Mountain had 2.19 inches and Log Creek 1.45 inches. The “season-ending” event took place in early October. In fact, Hamilton Mountain had nearly four inches of rain from October 7th through the 12th.

The 27 “critical RH” days were the most in the past eight years, and twice as many as 2002. The average daytime humidity during the heat wave at the end of July was 26.6%!! Several stations recorded minimum humidity values of 15-20% on the 27th. Horse Creek had 15% and Trout Lake had 12%. This average may be a bit misleading. Trout Lake RAWS may have had questionable data that could have skewed the areal average. There were 25 “critical RH” nights, which is about average. Five of those took place during the period September 1-10. The average recovery for that period was just 69%.

ERC indices reached critical levels (45 or higher) in late July, then remained near or above critical thresholds through early September. ERC’s peaked at 50.1 during the period August 21-31. The wet period in mid-September brought the ERC’s down to 15.7. The ERC’s climbed to 29.3 by the end of September, but fell to 6.6 by mid-October. The 100-hour fuel moisture values dropped to 8.7 (critical is 9) during the end-of-July heat wave, and hit 9.8 at the end of August. The general range during the peak fire season was 10-13.

Canyon Creek registered 10-minute sustained wind of 25 mph or more on June 5th and 6th, and again on the 28th and 29th. Blue Ridge RAWS had 19 mph on June 29th.

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(STATISTICS FOR AREA FOUR (CENTRAL CASCADES AND FOOTHILLS))

This is comprised of zones 606 and 608. RAWs used to represent the area include:

Boulder Creek, Yellowstone, Hawley Butte, Trout Creek, Brush Creek, Pebble, Fields, and Emigrant.

	TEMPERATURE		RELATIVE HUMIDITY				FUELS		PRECIPITATION			LTG
			4 RAWs MEET CRITERIA FOR 2 HRS						MEDIAN VALUES			
DATE	AVE MAX	AVE MIN	AVE MIN	# DAYS <25%	AVE RECOVERY	# NIGHTS <60	ERC	100 HR	# DAYS >.01	# DAYS >.10	# DAYS >.25	# DAYS
May 1-10	52.5	35.5	58.1	0	96.6	0	NA	NA	6	4	1	3
11-20	59.2	37.7	46.0	1	91.2	1	NA	NA	6	4	0	2
21-31	71.7	48.7	49.6	1	91.8	0	NA	NA	2	2	0	1
June 1-10	79.6	50.7	30.0	5	76.3	3	30.5	10.6	0	0	0	0
11-20	70.3	46.7	46.8	0	92.1	0	30.8	12.0	1	0	0	0
21-30	75.1	49.2	36.4	4	80.6	3	33.0	12.3	1	0	0	0
July 1-10	78.3	48.3	31.3	1	84.1	0	44.9	9.5	0	0	0	0
11-20	82.7	53.1	32.2	2	83.7	1	48.1	10.0	0	0	0	0
21-31	90.6	59.0	23.9	5	65.1	4	58.6	7.4	0	0	0	1
Aug 1-10	78.4	53.2	39.9	1	87.8	2	52.4	10.3	1	1	1	4
11-20	82.3	51.8	30.2	2	83.6	0	50.5	11.1	0	0	0	0
21-31	81.7	53.6	31.7	6	76.0	3	53.4	9.7	1	0	0	2
Sept 1-10	79.9	56.5	40.1	5	68.1	5	45.8	11.5	2	2	1	2
11-20	68.5	46.0	46.1	3	88.2	1	23.4	17.5	3	1	1	1
21-30	81.9	54.7	33.4	7	69.1	6	37.6	10.6	0	0	0	0
Oct 1-10	66.0	47.7	56.5	0	93.5	0	25.8	16.9	5	3	1	1
11-20	48.8	41.1	86.9	0	90.9	0	8.9	22.0	2	2	1	0
AVE/TOT.	73.4	49.0	42.3	43	83.5	29	38.8	12.2	30	19	6	17
2002	72.4	47.4	40.7	29	84.6	43	37.5	12.2	30	14	9	13
2001	73.5	47.8	38.0	36	83.5	40	NA	NA	35	29	12	11
2000	75	50	42	21	85	13	NA	NA	19	12	6	7
1999	73	50	43	15	81	18	NA	NA	34	12	4	9
1998	76	53	48	5	85	14	NA	NA	19	7	5	18
1997	74	52	51	5	89	10	NA	NA	34	25	14	12
1996	76	52	45	13	83	15	NA	NA	22	12	7	14

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<i>DRY SPELL</i>						
<i>2003</i>	<i>2002</i>	<i>2001</i>	<i>2000</i>	<i>1999</i>	<i>1998</i>	<i>1997</i>
<i>67 days</i>	<i>51 Days</i>	<i>22 Days</i>	<i>57 Days</i>	<i>34 Days</i>	<i>83 Days</i>	<i>41 Days</i>

AREA HIGHLIGHTS

A quick glance at the data would seem to indicate this area experienced a fairly benign fire season. Temperatures were similar to previous years, average daytime humidity was slightly higher than the past three seasons, precipitation was comparable to previous seasons, and overall fuel indices were similar to last year. However, this area experienced significant fire activity. Initial attack was able to handle most of the fire starts, but a few big fires managed to occur.

A closer look at the temperature data shows several warm periods. The first warm spell was in early June. The areal average temperature for the period June 1-10 was 80 degrees. On the 4th Trout Creek RAWS had a high of 92 degrees. The 5th was warmer yet, with several locations in the lower to mid 90s. This warm spell lasted through the 7th. The last three weeks of July were unseasonably warm as well. The last 11 days of the month were extremely warm. The area average high temperature for the period was 91 degrees. This also coincided with the Clark Fire. Highs on the 21st were generally 95-100. Emigrant RAWS hit 100 degrees. Highs on the 28th were in the mid 90s to just over 100. Trout Creek RAWS (in the Clark Fire periphery) reached 101, Emigrant had a high of 100. The extreme heat wave persisted through the end of the month. Emigrant hit 104 on the 29th and 101 on the 30th.

There were 43 "Critical RH" days in 2003. This was much higher than 2002, and even exceeded the 36 days in 2001. There were five critical days during the heat spell at the end of July, another six days at the end of August, and seven days in late September. Minimum RH values generally ranged from 10-15% during the late-July heat spell. Pebble recorded 9% at 1500 PDT on the 29th. Emigrant had 8% the afternoon of September 24th.

The dry spell (67 days) was the second-longest in the past seven years. It began May 31 and lasted through August 5. The dry spell would have extended through early September, if not for the August 6th wetting rain event. Fields RAWS registered 1.07 inches, Hawley Butte 0.54 inches, Emigrant 0.51 inches, and Trout Creek 0.39 inches. May was rather wet, with 10 days of median precipitation greater than a tenth of an inch and less than a quarter of an inch. The next "good rain event" took place September 7th. Yellowstone RAWS had 1.14 inches and Fields 1.03 inches.

Fuel indices started much higher than 2002, and remained at or above 2002 levels throughout much of the fire season. ERC values were around 45 in early July ("critical" is 50), then jumped to almost 60 by the end of July. Critical ERC's continued through August. Record ERC's were observed during the Clark Fire (late July). Some RAWS sites reported ERC's close to 65!! ERC values fell into the 20s in mid-September, thanks to much needed rainfall, but rose to almost 40 during the late September dry spell. The 100-hour fuel moisture values dropped to 7.4% in late July. Single-digit values (critical is 9%) also occurred in early July and late August.

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(STATISTICS FOR AREA FIVE (NORTH OREGON CASCADE EAST SLOPES))

This is comprised of zone 609. RAWS used to represent the area include:

Pollywog and Wamic Mill.

	TEMPERATURE		RELATIVE HUMIDITY				FUELS		PRECIPITATION			LTG
			BOTH RAWS MEET CRITERIA FOR 2 HRS						AVERAGE VALUES			
DATE	AVE MAX	AVE MIN	AVE MIN	# DAYS ≤15%	AVE RECOVERY	# NIGHT ≤ 40%	ERC	100 HR	# DAYS >.01	# DAYS >.10	# DAYS >.25	# DAYS
May 1-10	55.4	35.0	38.3	0	79.2	0	NA	NA	2	1	0	1
11-20	57.2	37.2	31.9	0	61.3	0	NA	NA	2	0	0	0
21-31	72.7	50.0	40.1	0	74.6	0	NA	NA	2	0	0	1
June 1-10	78.3	51.4	23.8	4	54.4	2	50.2	7.0	0	0	0	0
11-20	72.4	48.0	33.4	2	68.5	1	55.9	7.5	1	0	0	1
21-30	76.3	49.9	28.7	3	62.1	0	59.6	7.4	0	0	0	0
July 1-10	78.1	49.9	25.0	1	62.1	1	66.2	6.2	0	0	0	0
11-20	84.3	56.2	26.7	2	57.8	2	70.3	6.0	0	0	0	0
21-31	93.3	63.8	12.1	6	31.1	8	85.0	3.1	0	0	0	0
Aug 1-10	80.3	55.5	33.2	1	68.6	2	70.9	7.4	3	1	0	3
11-20	83.2	55.9	21.2	3	56.6	3	69.9	7.4	0	0	0	0
21-31	82.7	55.2	22.9	5	53.0	3	76.4	5.2	0	0	0	1
Sept 1-10	81.2	57.6	27.1	3	52.4	5	74.0	6.2	1	1	0	0
11-20	68.3	44.0	34.4	1	78.6	0	49.8	13.2	4	1	1	0
21-30	80.8	55.6	19.8	5	46.9	1	63.7	6.7	1	0	0	0
Oct 1-10	69.7	49.5	35.1	1	66.1	1	60.6	8.8	2	0	0	0
11-20	54.9	38.5	60.8	0	94.9	0	26.4	18.6	4	1	1	0
AVE/TOT.	74.7	50.2	30.3	37	62.8	29	62.8	7.9	22	5	2	7
2002	72.4	49.3	33.2	5	65.3	32	56.5	8.0	21	9	2	5
2001	72.9	48.4	32.7	15	70.5	24	NA	NA	25	13	5	12
2000	76	48	31	5	73	5	NA	NA	11	1	0	5
1999	74	46	30	6	70	11	NA	NA	10	4	2	13
1998	79	52	33	10	72	11	NA	NA	17	6	1	16
1997	75	50	36	1	75	3	NA	NA	25	9	3	19
1996	76	48	31	8	70	7	NA	NA	14	3	3	10

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<i>DRY SPELL</i>						
<i>2003</i>	<i>2002</i>	<i>2001</i>	<i>2000</i>	<i>1999</i>	<i>1998</i>	<i>1997</i>
<i>94 days</i>	<i>82 Days</i>	<i>32 Days</i>	<i>118 Days</i>	<i>50 Days</i>	<i>49 Days</i>	<i>54 Days</i>

AREA HIGHLIGHTS

Overall, 2003 was quite dry (notice the extreme number of “Critical RH” days and length of dry spell) with extreme fuel conditions. The average high temperature (75 degrees) was the highest since 2000. The average daytime humidity (30%) was the lowest in the last seven years (except in 1999 when it was also 30%). This area has been quite dry for the past several years. Extreme fuel conditions heightened concerns for a busy fire season. The relatively low frequency of lightning prevented what could have been a disastrous fire season.

Similar to all other areas, the last three weeks of July were unseasonably warm. In fact, the area-average high temperature was 84 degrees July 11-20, and 93 degrees July 21-31. Keep in mind that only two RAWS stations are used to comprise this area. Wamic Mill RAWS hit 101 degrees on July 22nd, 99 degrees on the 28th, 100 on the 29th and 99 on the 30th. Pollywog RAWS recorded 99 on the 29th.

There were 37 “Critical RH” days in 2003. This figure is a little mis-leading because the criteria was changed for 2003. A “Critical RH” day occurred when average afternoon humidity was 20% or less. In the past the criteria was 15% or less. Note that there were six “Critical RH” days (out of 11) for the period July 21-31, and another five days in late September. The area-average daytime humidity for the period July 21-31 was just 12%. There were 29 “Critical RH” nights, comparable to 2002 and 2001. However, the recent trend during the past several years has shown an dramatic increase in “Critical RH recovery” frequency.

The dry spell (**AVERAGE** precipitation) was the second-longest in the past seven years. Note the dry spell durations over the past few years. Except for 2001, the dry spell have become much longer. The 2003 dry spell started May 5th and lasted through August 6th. Both RAWS sites received almost two-tenths of an inch of precipitation on August 7th. The next significant rainfall occurred September 16th. The average precipitation for the day was 0.30 inches.

The fuel conditions were the most astounding factor in 2003. ERC values in early June were already around 50, compared to around 25 in 2002. Critical levels (70) were reached in early July and persisted through early September. Average ERC's hit 85 in late July. Values approached 90 on some of those days. ERC's fell to 50 in mid-September, but climbed to 64 in late September. Season-ending rainfall in mid-October lowered the ERC's to around 25. The 100-hour fuel moisture values were generally 6-8% in June through mid-July, then lowered to 3% in late July. Values remained 5-7% throughout the remainder of the peak fire season. Fuel moisture content increased to 13% in mid-September, but fell to 7% by the end of the month.

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(STATISTICS FOR AREA SIX (WARM SPRINGS AND DESCHUTES AREA))

This is comprised of zones 610 and 611. RAWs used to represent the area include:

Mt. Wilson, Mutton Mountain, HeHe1, Metolius Arm, Round Mountain, Lava Butte, Camp2, Colgate, Black Rock, and Cabin Lake.

	TEMPERATURE		RELATIVE HUMIDITY				FUELS		PRECIPITATION			LTG
			5 RAWs MEET CRITERIA FOR 2 HRS						MEDIAN VALUES			
DATE	AVE MAX	AVE MIN	AVE MIN	# DAYS ≤15%	AVE RECOVERY	# NIGHTS ≤40%	ERC	100 HR	# DAYS >.01	# DAYS >.10	# DAYS >.25	# DAYS
May 1-10	51.7	31.8	42.0	0	87.9	0	NA	NA	2	1	0	2
11-20	58.4	33.3	31.7	1	82.6	0	NA	NA	2	0	0	0
21-31	75.3	46.2	32.4	0	81.8	0	NA	NA	2	0	0	2
June 1-10	79.8	45.1	17.7	4	65.5	0	55.5	7.3	0	0	0	0
11-20	74.1	43.7	25.8	2	76.6	0	57.4	7.5	0	0	0	1
21-30	75.8	43.2	20.8	5	68.2	1	58.9	8.2	0	0	0	0
July 1-10	80.3	44.8	19.6	5	73.0	0	66.7	6.6	0	0	0	1
11-20	86.7	51.5	20.3	3	67.5	0	69.6	6.7	0	0	0	1
21-31	94.3	58.0	13.8	10	51.8	3	77.9	5.0	0	0	0	3
Aug 1-10	79.8	51.1	25.9	1	78.0	0	66.6	8.5	4	0	0	4
11-20	84.5	49.3	16.9	5	64.5	1	68.3	7.6	0	0	0	0
21-31	82.4	50.3	21.5	3	61.2	1	65.9	7.5	1	1	0	2
Sept 1-10	80.0	51.0	23.5	4	59.3	2	64.5	7.9	1	1	0	3
11-20	69.7	40.5	24.3	4	74.4	0	51.0	11.4	1	0	0	0
21-30	83.4	46.8	15.4	6	53.0	1	66.1	6.2	0	0	0	1
Oct 1-10	69.1	43.8	31.0	0	73.3	0	59.9	9.2	0	0	0	1
11-20	50.6	35.3	56.6	0	86.2	0	39.2	14.5	1	1	0	0
AVE/TOT.	75.1	45.0	25.8	53	70.9	9	62.0	8.2	14	4	0	21
2002	73.0	42.7	25.3	36	70.9	25	60.7	8.2	10	1	0	16
2001	74.1	42.7	25.1	38	72.7	30	NA	NA	22	11	4	19
2000	77	43	24	30	73	1	NA	NA	10	1	0	7
1999	74	41	25	33	76	41	NA	NA	17	6	1	20
1998	77	46	30	19	80	11	NA	NA	28	14	3	25
1997	74	44	33	6	84	0	NA	NA	27	16	9	22
1996	75	43	28	15	76	4	NA	NA	17	5	4	18

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DRY SPELL						
2003	2002	2001	2000	1999	1998	1997
103 days	155 Days	29 Days	92 Days	64 Days	26 Days	28 Days

AREA HIGHLIGHTS

Major highlights for this area included 1) Number of “Critical RH” days, 2) low number of “Critical RH” nights, 3) Lightning frequency, and 4) length of dry spell. This area has also suffered from lack of precipitation (winter and spring) for the past few years. Moderate to extreme fuel conditions were common during the peak fire season (July through early September). There was also a higher frequency lightning days (21), compared to previous years. A few large fires occurred in 2003, the B&B complex the most notable.

The area-average high temperature (75 degrees) was similar to previous years. Record or near-record heat conditions occurred in mid to late July. The average high July 11-20 was 87 degrees, and 94 degrees July 21-31. Colgate RAWS had a high of 103 on July 21, while Cabin Lake and Lava Butte hit 101. Temperatures were even higher on the 22nd. Colgate reached 105, Metolius Arm 104, Cabin Lake 104, and Lava Butte 103 degrees. Highs of 95-105 continued through the end of July. A somewhat unusual warm spell occurred in late September. The area average high for September 21-30 was 83 degrees. Many locations were in the low to middle 90s.

There were 53 “Critical RH” days, a major increase over the past couple of years, and the most in the last eight years. The heat wave at the end of July resulted in 10 such days. The average minimum humidity for the period July 21-31 was 13.8%. Mutton Mountain RAWS had a minimum RH of just 6% on July 23rd. HeHe1 RAWS had 6% on the 29th, Mutton Mountain recorded 5% on the 30th, Lava Butte dropped to just 3% on the 30th and again on the 31st.

There were just nine “Critical RH” nights in 2003, a big drop-off from 2002 and 2001. Three nights occurred in late July. However, the overall average humidity recovery (71%) was the lowest in the past seven years.

The 103-day dry spell was the second-longest in the past eight years. The 2002 duration (155 days) may never be equaled. The 2003 period started May 11 and extended through August 21. Wetting rain finally occurred on August 22nd. Lava Butte and Black Rock received nearly one-half inch, while Cabin Lake and Tumalo picked up about one-quarter inch. The next wetting rain event happened on September 7th. Several locations had a tenth to a third of an inch of rainfall. On September 10th, Lava Butte recorded 1.65 inches.

Fuel conditions in 2003 were quite similar to 2002. June ERC values were in the mid to upper 50s. However, by the end of July ERC's had reached the upper 70s (critical is 67 or higher). ERC's remained in the mid to upper 60s through early September, then fell off to the lower 50s. The 100-hour fuel moisture values were generally 5-7% in June and July (lower than 2002). The lowest levels occurred in late September (6.2%).